STATE OF IOWA
DEPARTMENT OF COMMERCE
BEFORE THE IOWA UTILITIES BOARD

IN RE:	:	**DOCKET NO.**	**RPU-2016-_____**
	:		**TF-2016- _____**
LIBERTY UTILITIES (MIDSTATES NATURAL GAS) CORP. D/B/A LIBERTY UTILITIES	:		

DIRECT TESTIMONY
OF
KEITH MAGEE

SCOTTMADDEN, INC.

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, AFFILIATION AND BUSINESS ADDRESS.

A. My name is Keith Magee. I am a Director at ScottMadden, Inc. ("ScottMadden"). My business address is 1900 West Park Drive, Suite 250, Westborough, MA 01581.

Q. ON WHOSE BEHALF ARE YOU SUBMITTING THIS DIRECT TESTIMONY?

I am submitting this Direct Testimony ("Direct Testimony") before the Iowa Utilities Board ("the Board") on behalf of Liberty Utilities (Midstates Natural Gas) Corporation d/b/a Liberty Utilities ("Liberty Midstates" or the "Company"), an indirect wholly owned subsidiary of Algonquin Power & Utilities Corp ("APUC").

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.

A. I hold a Bachelor's Degree in Economics from Whitman College, and an MBA with a concentration in Finance from the F.W. Olin Graduate School of Business at Babson College. I also hold the Chartered Financial Analyst designation.

Q. PLEASE DESCRIBE YOUR EXPERIENCE IN THE ENERGY AND UTILITY INDUSTRIES.

A. I have been a consultant in the utility and energy industry since 2010, providing consulting services to utility and energy clients on a range of financial and economic issues including areas such as rate case activities (e.g., cost of service and rate design) and policy and strategy issues (e.g., capital structure, cost of capital and capital investment related activities). Many of my engagements have included developing cost of capital analyses and testimony. A summary of my professional and educational background is included in Magee Exhibit KM-1, filed with my Direct Testimony.

II. PURPOSE AND OVERVIEW OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. The purpose of my Direct Testimony is to present evidence and provide a recommendation regarding the Company's return on equity ("ROE") and capital structure, and to assess the reasonableness of the Company's cost of debt.[1] My analyses and conclusions are supported by the data presented in Magee Exhibit KM-2, Schedules 1 through 12, which have been prepared by me or under my

[1] Throughout my Direct Testimony, I interchangeably use the terms "ROE" and "cost of equity."

direction. In addition, I sponsor Exhibit KM-3, setting forth the capital structure and cost of capital, as noted by Company witness Schwartz.

Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE APPROPRIATE COST OF EQUITY, CAPITAL STRUCTURE AND COST OF DEBT FOR THE COMPANY?

A. My analyses indicate that the Company's cost of equity currently is in the range of 10.00 percent to 10.50 percent. Based on the quantitative and qualitative analyses discussed throughout my Direct Testimony, I recommend that the Board authorize the Company the opportunity to earn an ROE of 10.25 percent.

As to the Company's capital structure, I propose a capital structure which includes 54.00 percent common equity and 46.00 percent long-term debt. That capital structure includes an equity ratio that is somewhat below Liberty Utilities Co.'s equity ratio, but is consistent with those in place at comparable natural gas companies and falls within Moody's benchmark equity ratio range for Baa-rated utilities. In light of the importance of maintaining access to capital, and seeing that it is consistent with similarly situated utility companies, I conclude that a 54.00 percent equity ratio is reasonable and appropriate.

Lastly, I note that the Company's 4.83 percent cost of debt is generally consistent with, although lower than, the average debt cost rates authorized for natural gas utilities during the twelve months ended February 12, 2016. As such, I conclude that the Company's cost of debt is reasonable and appropriate.

Q. PLEASE PROVIDE A BRIEF OVERVIEW OF THE ANALYSES THAT LED TO YOUR ROE RECOMMENDATION.

A. Because all models are subject to various assumptions and constraints, equity analysts and investors tend to use multiple methods to develop their return requirements.[2] My ROE recommendation in this proceeding relies on the results of the constant growth discounted cash flow ("DCF") model, the capital asset pricing model ("CAPM"), and the bond yield plus risk premium ("risk premium") model. To assess the reasonableness of the results of those models, and to help inform the selection of my recommended ROE within the range of results produced by those models, I also considered the results of an expected earnings analysis.

My recommendation also takes into consideration the Company's risk and cost profile, in particular: (1) its relatively small size; (2) its exposure to revenue variability from weather fluctuations; and (3) the direct costs associated with equity issuances. Although I did not make explicit adjustments to my ROE estimates for those factors, I did take them into consideration in determining the range in which the Company's cost of equity likely falls.

Q. HOW IS THE REMAINDER OF YOUR DIRECT TESTIMONY ORGANIZED?

A. The remainder of my Direct Testimony is organized as follows:

[2] *See, e.g.*, Eugene Brigham, Louis Gapenski, Financial Management: Theory and Practice, 7th Ed., 1994, at 341, and Tom Copeland, Tim Koller and Jack Murrin, Valuation: Measuring and Managing the Value of Companies, 3rd ed., 2000, at 214.

Section III – Provides a summary of my primary conclusions and recommendations;

Section IV – Discusses the regulatory guidelines and financial considerations pertinent to the development of the cost of capital;

Section V – Explains my selection of the proxy group of natural gas utilities used to develop my analytical results;

Section VI – Explains my analyses and the analytical bases for my ROE recommendation;

Section VII – Provides the results of additional benchmark analyses used to provide a check on the reasonableness of the results of the ROE models used to develop my ROE recommendation;

Section VIII – Provides a discussion of specific business risks and other considerations that have a direct bearing on the Company's cost of equity;

Section IX – Highlights the current capital market conditions and their effect on the Company's cost of equity;

Section X – Explains my recommendation for the Company's capital structure;

Section XI – Briefly discusses the Company's cost of debt; and

Section XII – Summarizes my conclusions and recommendations.

III. SUMMARY OF CONCLUSIONS

Q. WHAT ARE THE KEY FACTORS CONSIDERED IN YOUR ANALYSES AND UPON WHICH YOU BASE YOUR RECOMMENDED ROE?

A. My analyses and recommendations considered the following:

- The United States Supreme Court's *Bluefield* and *Hope* decisions[3] that established the following standards for determining a fair and reasonable allowed ROE: (1) consistency of the allowed return with other businesses having similar risk; (2) adequacy of the return to provide access to capital and support credit quality; (3) an end result of just and reasonable rates;
- The Company's business risks relative to the proxy group of comparable companies (set forth in Table 2 below) and the implications of those risks in arriving at the appropriate ROE from within the range of results established by the Discounted Cash Flow ("DCF") method and Capital Asset Pricing Model ("CAPM"); and,
- The effect of current capital market conditions on investors' return requirements.

Q. WHAT ARE THE RESULTS OF YOUR ANALYSES?

A. The results of my analyses are summarized in Table 1, below.

[3] *Bluefield Waterworks & Improvement Co., v. Public Service Comm'n of West Virginia*, 262 U.S. 679 (1923) ("Bluefield"); *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944) ("Hope").

Table 1: Summary of Analytical ROE Results

Constant Growth DCF	*Low*	*Proxy Group Mean*	*High*
30-day Stock Prices	8.14%	9.32%	10.96%
CAPM		*Bloomberg MRP*	*Value Line MRP*
Value Line Beta, Current Risk-Free Rate (2.79%)		10.86%	10.40%
Value Line Beta, Near-Term Projected Risk-Free Rate (3.35%)		10.99%	10.54%
Bloomberg Beta, Current Risk-Free Rate (2.79%)		9.55%	9.17%
Bloomberg Beta, Near-Term Projected Risk-Free Rate (3.35%)		9.76%	9.37%
Bond Yield Plus Risk Premium	*Low*	*Mean*	*High*
Current and Projected Utility Baa Bond Yields	10.00%	10.13%	10.60%
Expected Earnings Analysis	*Low*	*Mean*	*High*
Value Line Projected Return on Book Equity	8.84%	11.32%	12.91%

Based on the results of the DCF, CAPM and risk premium analyses, I believe that a reasonable range of Liberty Midstates' cost of equity is from 10.00 percent to 10.50 percent. As shown in Table 1, the results of the expected earnings analyses indicate that result is within the range, although on the low side, of the proxy groups' expected earned return on book equity. Considering the capital market environment and the Company's business risks relative to the proxy group, it is my view that an ROE of 10.25 percent is reasonable.

IV. REGULATORY GUIDELINES AND FINANCIAL CONSIDERATIONS

Q. PLEASE PROVIDE A BRIEF SUMMARY OF THE GUIDELINES ESTABLISHED BY THE UNITED STATES SUPREME COURT (THE "COURT") FOR THE PURPOSE OF DETERMINING THE ROE.

A. The Court established the guiding principles for establishing a fair return for capital in the *Bluefield* and *Hope* cases. In those cases, the Court recognized that

the fair rate of return on equity should be: (1) comparable to returns investors expect to earn on other investments of similar risk; (2) sufficient to assure confidence in the company's financial integrity; and (3) adequate to maintain and support the company's credit and to attract capital.

Based on those standards, the authorized ROE should provide the Company with the opportunity to earn a fair and reasonable return on its regulated utility operations and should enable efficient access to external capital under a variety of market conditions.

Q. WHY IS IT IMPORTANT FOR A UTILITY TO BE ALLOWED THE OPPORTUNITY TO EARN A RETURN ADEQUATE TO ATTRACT EQUITY CAPITAL AND MAINTAIN FINANCIAL INTEGRITY?

A. Investors have many options available to them and will only invest in a firm if the expected return justifies the risks taken on in making that investment. Customers have an interest in safe, reliable, and efficient service, which depends on investors' willingness to commit the capital needed to maintain and improve the utility system. In that important sense, investors and customers have a common interest in a financially strong utility that is able to access capital on reasonable terms when and as needed. A return that is adequate to attract capital and maintain financial integrity enables a utility to access capital markets at reasonable terms and continue to make needed investments. To the extent Liberty Midstates is provided a reasonable opportunity to earn its market-based cost of equity, neither customers nor shareholders will be disadvantaged.

V. PROXY GROUP SELECTION

Q. AS A PRELIMINARY MATTER, WHY IS IT NECESSARY TO SELECT A GROUP OF PROXY COMPANIES TO DETERMINE THE COST OF EQUITY FOR LIBERTY MIDSTATES?

A. Since the ROE is a market-based concept and Liberty Midstates is not a publicly traded entity, it is necessary to establish a group of comparable publicly-traded companies to serve as its "proxy."

Even if Liberty Midstates were a publicly traded entity, short-term events could bias its market value during a given period of time. A significant benefit of using a proxy group is that it serves to moderate the effects of anomalous, temporary events associated with any one company. In addition, the use of a proxy group is consistent with the *Bluefield* and *Hope* standards that require the allowed return to be commensurate with the returns available to other investments with comparable risks.

Q. DOES THE SELECTION OF A RISK-COMPARABLE PROXY GROUP SUGGEST THAT ANALYTICAL RESULTS WILL BE TIGHTLY CLUSTERED AROUND AVERAGE (*I.E.*, MEAN) RESULTS?

A. No. For example, the DCF approach calculates the cost of equity using the expected dividend yield and projected growth. Despite the care taken to ensure risk comparability, investor expectations with respect to future risks and growth opportunities will vary from company to company. Even when looking at a single company, growth projections can vary significantly. Therefore, even within a group of similarly situated companies, it is common for analytical results to

reflect a seemingly wide range. Consequently, at issue is how to estimate a Company's ROE from within that range. That determination necessarily must consider a wide range of both empirical and qualitative information.

Q. PLEASE PROVIDE A SUMMARY PROFILE OF LIBERTY MIDSTATES.

A. Liberty Midstates is a subsidiary of Liberty Utilities Co. ("LUCo"), which in turn is an indirect wholly owned subsidiary of APUC. Liberty Midstates provides natural gas distribution service to approximately 4,500 customers in Iowa.[4] APUC and LUCo currently have long-term issuer ratings of BBB from Standard & Poor's.

Q. HOW DID YOU SELECT THE COMPANIES INCLUDED IN YOUR PROXY GROUP?

A. I began with the universe of eleven U.S. domestic companies that The Value Line Investment Survey ("Value Line") classifies as natural gas utilities, and applied the following screening criteria:

- Because certain of the models used in my analyses assume that earnings and dividends grow over time, I excluded companies that do not have positive earnings growth estimates or pay consistent quarterly cash dividends;
- To ensure that my analyses are based on consensus growth expectations, I excluded companies that were not covered by at least two utility industry equity analysts;

[4] *See* Algonquin Power & Utilities Corporation, Annual Information Form, March 30, 2015, at 43. Available at http://investors.algonquinpower.com/FinancialDocs.aspx?iid=4142273.

- To select a proxy group with financial characteristics similar to Liberty Midstates, I excluded companies that have below investment grade corporate credit ratings and/or senior unsecured bond ratings from Standard & Poor's ("S&P") or Moody's;
- To select companies whose principal business activity consists of regulated natural gas distribution, I excluded companies with less than 60.00 percent of consolidated net operating income derived from regulated natural gas utility operations; and
- To ensure the data used in my ROE analyses are not skewed by temporary corporate actions, I eliminated companies that are known to be party to a merger or other significant transaction.

Q. WHAT COMPANIES MET THOSE SCREENING CRITERIA?

A. The criteria discussed above resulted in a proxy group of the following seven companies:

Table 2: Proxy Group Screening Results

Company	***Ticker***
Atmos Energy	ATO
Laclede Group	LG
New Jersey Resources	NJR
Northwest Natural Gas	NWN
South Jersey Industries	SJI
Southwest Gas	SWX
WGL Holdings	WGL

Q. DO YOU BELIEVE THAT A PROXY GROUP OF SEVEN COMPANIES IS SUFFICIENTLY LARGE?

A. Yes. The analyses performed in estimating the ROE are more likely to be representative of the subject utility's cost of equity to the extent that the chosen proxy companies are fundamentally comparable to the subject utility. Because all analysts use some form of screening process to arrive at a proxy group, the group, by definition, is not randomly drawn from a larger population. Consequently, there is no reason to place more reliance on the quantitative results of a larger proxy group simply by virtue of the resulting larger number of observations. In my view, including companies whose fundamental comparability is tenuous at best simply for the purpose of expanding the number of observations does not add relevant information to the analysis.

VI. COST OF EQUITY ESTIMATION

Q. PLEASE BRIEFLY DISCUSS THE ROE IN THE CONTEXT OF THE REGULATED RATE OF RETURN.

A. Regulated utilities primarily use common stock and long-term debt to finance their capital investments. The overall allowed rate of return ("ROR") weighs the costs of the individual sources of capital by their respective book values. While the cost of debt can be directly observed, the cost of equity is market-based and, therefore, must be estimated based on observable market information.

Q. HOW IS THE REQUIRED ROE DETERMINED?

A. The required ROE is estimated using quantitative models that rely on market data to quantify investor expectations regarding the range of expected equity returns.

The use of different models, and the use of varying investor assumptions within each model, produces a range of results from which the market-required ROE must be estimated. As discussed throughout my Direct Testimony, that estimation must be based on a comprehensive review of relevant data and information, and does not necessarily lend itself to a strict mathematical solution. Consequently, the key consideration in determining the ROE is to ensure that the overall analysis reasonably reflects investors' view of the financial markets in general and the subject company (in the context of the proxy companies) in particular.

Q. WHAT METHODS DID YOU USE TO DETERMINE THE COMPANY'S ROE?

A. I have relied on constant growth DCF, CAPM and risk premium analyses to determine my recommended ROE, and have used the expected earnings approach as a corroborating methodology in arriving at my ROE recommendation.[5]

Q. WHY DO YOU BELIEVE IT IS IMPORTANT TO USE MORE THAN ONE ANALYTICAL APPROACH?

A. Although we cannot directly observe the cost of equity, we can observe the methods frequently used by analysts to arrive at their return requirements and expectations. While investors and analysts tend to use multiple approaches in developing their estimate of return requirements, each methodology requires certain judgment with respect to the reasonableness of assumptions and the

[5] I recognize the Board has noted it considers the DCF, CAPM and risk premium analyses when determining a utility's ROE, and have therefore relied primarily on those methods. *See*, for example, the Board's order in MidAmerican Energy Company's ("MidAmerican") most recent rate case (Docket RPU-2013-0004), March 17, 2015, at 23.

validity of proxies in its application. In essence, analysts and academics understand that ROE models are tools to be used in the ROE estimation process and that strict adherence to any single approach, or the specific results of any single approach, can lead to flawed and irrelevant conclusions. That position is consistent with the *Bluefield* and *Hope* finding that it is the analytical result, as opposed to the methodology, that is controlling in arriving at ROE determinations. A reasonable ROE estimate therefore considers alternative methodologies, observable market data, and the reasonableness of their individual and collective results.

In my view, therefore, it is both prudent and appropriate to use multiple methodologies in order to mitigate the effects of assumptions and inputs associated with relying exclusively on any single approach. Such use, however, must be tempered with due caution as to the results generated by each individual approach. In light of that, I have relied on three different analytical models and considered their results in the context of additional data (such as capital market conditions and analyst expectations for the proxy group's earned return on book equity) to arrive at my recommended ROE.

CONSTANT GROWTH DCF MODEL

Q. IS THE DCF METHODOLOGY WIDELY USED IN REGULATORY PROCEEDINGS?

A. Yes. In my experience, the DCF methodology is widely recognized in regulatory proceedings, as well as in financial literature. Nonetheless, neither the DCF nor any other model should be applied without considerable judgment in the selection

of data and the interpretation of results.

Q. PLEASE DESCRIBE THE DCF APPROACH.

A. The DCF approach is based on the theory that a given stock's current price represents the present value of its expected future cash flows. A common formulation of the DCF approach, also known as the dividend discount model, can be expressed as follows:

$$P = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \cdots + \frac{D_\infty}{(1+k)^\infty} \qquad \text{Equation [1]}$$

where P represents the current stock price, $D_1 \ldots D_\infty$ represent expected future dividends, and k is the discount rate, or required ROE. Under the assumption that cash flows will grow at a constant rate, Equation [1] is a standard present value calculation that can be simplified and rearranged into the familiar form:

$$k = \frac{D_0\ (1+g)}{P} + g \qquad \text{Equation [2]}$$

Equation [2] often is referred to as the "constant growth DCF" model, in which the first term is the expected dividend yield and the second term is the expected long-term annual growth rate.

In its simplest form, the DCF model expresses the cost of equity as the sum of the expected dividend yield and long-term growth rate. In essence, the DCF model assumes that the total return received by investors includes the dividend yield and the rate of growth. As explained below, under the model's assumptions, the rate of growth equals the rate of capital appreciation. That is, the model assumes that the investor's return is the sum of the dividend yield and the increase in the stock price.

Q. WHAT ASSUMPTIONS ARE REQUIRED FOR THE CONSTANT GROWTH DCF MODEL?

A. The constant growth DCF model requires the following assumptions: (1) a constant average growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant price-to-earnings multiple; and (4) a discount rate greater than the expected growth rate. In addition, the constant growth DCF model assumes that the same return will be required every year, in perpetuity (see Equation [1], above).

Q. WHAT MARKET DATA DID YOU USE TO CALCULATE THE DIVIDEND YIELD COMPONENT OF YOUR DCF MODEL?

A. The dividend yield is based on the proxy companies' current annualized dividend, and average closing stock price over the 30-trading day period as of February 12, 2016.

Q. WHY DID YOU USE A 30-TRADING DAY PERIOD TO CALCULATE AN AVERAGE STOCK PRICE?

A. I did so to ensure that the model's results are not skewed by anomalous events that may affect stock prices on any given trading day. At the same time, the averaging period should be reasonably representative of expected capital market conditions over the long term. In my view, using 30-day averages reasonably balances those concerns at the current time.

Q. DID YOU MAKE ANY ADJUSTMENTS TO THE DIVIDEND YIELD TO ACCOUNT FOR PERIODIC GROWTH IN DIVIDENDS?

A. Yes, I did. Since utility companies tend to increase their quarterly dividends at

different times throughout the year, it is reasonable to assume that dividend increases will be evenly distributed over calendar quarters. Given that assumption, it is appropriate to calculate the expected dividend yield by applying one-half of the long-term growth rate to the current dividend yield.[6] That adjustment ensures that the expected dividend yield is, on average, representative of the coming twelve-month period, and does not overstate the dividends to be paid during that time.

Q. IS IT IMPORTANT TO SELECT APPROPRIATE MEASURES OF LONG-TERM GROWTH IN APPLYING THE DCF MODEL?

A. Yes. In its constant growth form, the DCF model (*i.e.*, as presented in Equation [2] above) assumes a single growth estimate in perpetuity. In order to reduce the long-term growth rate to a single measure, one must assume a constant payout ratio, and that earnings per share, dividends per share and book value per share all grow at the same constant rate. Over the long term, however, dividend growth can only be sustained by earnings growth. Consequently, it is important to incorporate a variety of measures of long-term earnings growth into the constant growth DCF model.

Q. IS IT COMMON IN PRACTICE TO RELY ON ANALYSTS' FORECASTS AS THE BASIS OF GROWTH RATE PROJECTIONS?

A. Yes. The cost of equity is a forward-looking concept that focuses on investor expectations regarding future returns. The estimation of such returns, therefore, should be based on forward-looking or projected data. Indeed, substantial

[6] *See* Schedule 1.

academic research has demonstrated the relationship between analysts' forecasts and investor expectations.[7] In my view, therefore, Value Line, First Call Corporation (now known as Thomson Reuters I/B/E/S) ("First Call") and Zacks Investment Research ("Zacks") (the latter two of which are consensus earnings forecast estimates) provide appropriate sources of earnings growth forecasts.

Q. PLEASE EXPLAIN HOW YOU APPLIED THE CONSTANT GROWTH DCF MODEL.

A. I applied the DCF model to the proxy group of natural gas utility companies using the following inputs for the price and dividend terms:

1. The average daily closing prices for the 30-trading day ended February 12, 2016, for the term P_0; and
2. The annualized dividend per share as of February 12, 2016, for the term D_0.

I then calculated my DCF results using each of the following growth terms:

1. The Zacks consensus long-term earnings growth estimates;
2. The First Call consensus long-term earnings growth estimates; and
3. The Value Line long-term earnings growth estimates;
4. An estimate of Retention Growth.

Q. PLEASE DESCRIBE THE RETENTION GROWTH ESTIMATE AS APPLIED IN YOUR CONSTANT GROWTH DCF MODEL.

A. The Retention Growth model, which is a generally recognized and widely taught

[7] See, for example, Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006, at 298-303; Harris and Marston, "Estimating Shareholder Risk Premia Using Analysts Growth Forecasts", Financial Management, 21 (Summer 1992); Charles F. Phillips, Jr., The Economics of Regulation, Revised Edition, 1969, Richard D. Irwin, Inc., at 285.

method of estimating long-term growth, is an alternative approach to the use of analysts' earnings growth estimates.[8] In essence, the model is premised on the proposition that a firm's growth is a function of its expected earnings, and the extent to which it retains earnings to invest in the enterprise. In its simplest form, the model represents long-term growth as the product of the retention ratio (*i.e.*, the percentage of earnings not paid out as dividends (referred to below as "b") and the expected return on book equity (referred to below as "r")). Thus, the simple "b x r" form of the model projects growth as a function of internally generated funds. That form of the model is limiting, however, in that it does not provide for growth funded from external equity.

The "br + sv" form of the Retention Growth estimate used in my DCF analysis is meant to reflect growth from both internally generated funds (*i.e.*, the "br" term) and from issuances of equity (*i.e.*, the "sv" term). The first term, which is the product of the retention ratio (*i.e.*, "b", or the percentage of net income not paid to shareholders as dividends) and the expected Return on Equity (*i.e.*, "r") represents the portion of net income that is "plowed back" into the Company as a means of funding growth. The "sv" term is represented as:

$$\left(\frac{m}{b} - 1\right) \; x \; Growth\; rate\; in\; Common\; Shares \qquad \text{Equation [3]}$$

where $\frac{m}{b}$ is the Market-to-Book ratio.

In this form, the "sv" term reflects an element of growth as the product of (a) the expected growth in shares outstanding, and (b) that portion of the market-to-book ratio that exceeds unity. As shown in Schedule 2, all of the components

[8] *See*, for example, 2011 Chartered Financial Analyst Curriculum Level I, Volume 4 at 57.

of the Retention Growth model can be derived from data provided by Value Line.

Q. HOW DID YOU CALCULATE THE HIGH AND LOW DCF RESULTS?

A. I calculated the proxy group mean high DCF result using the highest of the EPS growth rate estimates (*i.e.*, the Value Line, Zacks, and First Call growth rates and the Retention Growth estimate) for each proxy group company. The proxy group mean high result then reflects the average of the maximum DCF result for each proxy company. I used a similar approach to calculate the proxy group mean low results, using instead the lowest of the growth estimates for each proxy group company.

Q. WHAT ARE THE RESULTS OF YOUR DCF ANALYSIS?

A. My constant growth DCF results are summarized in Table 3, below (*see* also Schedule 1).

Table 3: Constant Growth DCF Model Results[9]

	Mean Low	***Mean***	***Mean High***
30-Day Average Stock Price	8.14%	9.32%	10.96%

CAPM ANALYSIS

Q. PLEASE BRIEFLY DESCRIBE THE CAPM ANALYSIS.

A. The CAPM analysis is a risk premium method that estimates the cost of equity for a given security as a function of a risk-free return plus a risk premium (to compensate investors for the non-diversifiable or "systematic" risk of that security). As shown in Equation [4], the CAPM is defined by four components,

[9] DCF results presented in Table 3 are unadjusted (*i.e.*, prior to any adjustment for flotation costs).

each of which theoretically must be a forward-looking estimate:

$$k = r_f + \beta(r_m - r_f) \qquad \text{Equation [4]}$$

where:

k = the required market ROE for a security;

β = the beta coefficient of that security;

r_f = the risk-free rate of return; and

r_m = the required return on the market as a whole.

In Equation [4], the term ($r_m - r_f$) represents the market risk premium.[10] According to the theory underlying the CAPM, since unsystematic risk can be diversified away by adding securities to their investment portfolio, investors should be concerned only with systematic or non-diversifiable risk. Non-diversifiable risk is measured by the beta coefficient, which is defined as:

$$\beta_j = \frac{\sigma_j}{\sigma_m} x\, \rho_{j,m} \qquad \text{Equation [5]}$$

Where σ_j is the standard deviation of returns for company "*j*," σ_m is the standard deviation of returns for the broad market (as measured, for example, by the S&P 500 Index), and $\rho_{j,m}$ is the correlation of returns in between company *j* and the broad market. The beta coefficient therefore represents both relative volatility (*i.e.*, the standard deviation) of returns, and the correlation in returns between the subject company and the overall market.

Intuitively, higher beta coefficients indicate that the subject company's returns have been relatively volatile, and are responsive to the movements of the

[10] The market risk premium is defined as the incremental return of the market over the risk-free rate.

overall market. If a company has a beta coefficient of 1.00, it is considered as risky as the market and its required return equals the expected market return.

Q. WHAT RISK-FREE RATE ASSUMPTION DID YOU INCLUDE IN YOUR CAPM ANALYSIS?

A. In determining the security most relevant to the application of the CAPM, it is important to select the term (or maturity) that best matches the life of the underlying investment. Natural gas utilities typically are long-duration investments and as such, I used the 30-year Treasury bonds as my estimate of the risk-free rate. I relied on both the current 30-day average yield (2.79 percent as of February 12, 2016) and the near-term projected yield reported by Blue Chip Financial Forecast (3.35 percent).

Q. WHY HAVE YOU CONSIDERED A FORWARD-LOOKING RISK FREE RATE?

A. In general, the cost of capital is a forward-looking concept. The relevant analytical issue in the application of the CAPM is to ensure that all three components of the model (*i.e.*, the risk-free rate, beta, and the MRP) are consistent with current market conditions and investor perceptions.

Since the purpose of this proceeding is to establish the cost of equity for Liberty Midstates' gas distribution operations on a going-forward basis, it is important to develop a CAPM analysis that reflects investor expectations concerning the risk-free rate. As discussed in more detail in Section VIII of this Direct Testimony, the need to consider forward-looking interest rates is particularly important at the current time given that Federal Reserve actions have

served to intentionally lower long-term Treasury Yields.[11]

Q. WHAT BETA COEFFICIENTS DID YOU USE IN YOUR CAPM MODEL?

A. I considered the beta coefficients reported by two sources: Bloomberg Professional ("Bloomberg") and Value Line. For each source, I employed the average of the reported beta coefficient for each proxy group company. Value Line calculates the beta coefficient over a five-year period using the New York Stock Exchange ("NYSE") Index as the market return, while Bloomberg's calculation is based on two years of data and uses the S&P 500 Index as the market return. Both of those services adjust their calculated (or raw) beta coefficients to reflect the tendency of the beta coefficient to regress to the market mean of 1.00.[12] The Value Line and Bloomberg proxy group average beta coefficients are 0.76 and 0.63, respectively.[13]

Q. PLEASE DESCRIBE YOUR APPROACH TO ESTIMATING THE MARKET RISK PREMIUM.

A. The approach is based on the market required return, less the current 30-year Treasury bond yield. To estimate the market required return, I calculated the market capitalization weighted average ROE using the constant growth DCF model. To do so, I relied on data from two sources: (1) Bloomberg and (2) Value

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[11] In MidAmerican's last rate case, Docket No. RPU-2013-0004, Office of Consumer Advocate ("OCA") witness Munoz also noted that long-term Treasury yields have been affected by Federal Reserve monetary policy. *See* Direct Testimony of Marcos Munoz, Docket No. RPU-2013--0004, September 10, 2013, at 24.

[12] The regression tendency of beta coefficients to converge to 1.0 over time is well known and widely discussed in financial literature. (*See, e.g.*, Blume, Marshall E., *On the Assessment of Risk*, The Journal of Finance, Vol. 26, No. 1, March 1971, at 1-10).

[13] *See* Schedule 4.

Line. For both Bloomberg and Value Line, I calculated the market capitalization weighted expected dividend yield (using the same one-half growth rate assumption described earlier), and combined that amount with the market capitalization weighted projected earnings growth rate to arrive at the average DCF result. I performed that calculation using each of companies in the S&P 500 Index for which Bloomberg and Value Line provided growth estimates. I then subtracted the 30-year Treasury yield from that amount to arrive at the market DCF-derived ex-ante market risk premium estimate. The results of those two calculations are provided in Schedule 3 of Magee Exhibit KM-2.

Q. WHAT ARE THE RESULTS OF YOUR CAPM ANALYSIS?

A. The results of my CAPM analysis are summarized in Table 4, below (*see* also Magee Exhibit KM-2, Schedule 3).

Table 4: Summary of CAPM Results

	Bloomberg MRP	***Value Line MRP***
Value Line Beta, Current 30-Year Treasury (2.79%)	10.86%	10.40%
Value Line Beta, Projected Risk-Free Rate (3.35%)	10.99%	10.54%
Bloomberg, Current Risk-Free Rate (2.79%)	9.55%	9.17%
Bloomberg, Projected Risk-Free Rate (3.35%)	9.76%	9.37%

BOND YIELD PLUS RISK PREMIUM ANALYSIS

Q. PLEASE GENERALLY DESCRIBE THE BOND YIELD PLUS RISK PREMIUM APPROACH.

A. This approach is based on the basic financial tenet that equity investors bear the residual risk associated with ownership and therefore require a premium over the

return they would have earned as a bondholder. That is, since returns to equity holders are more risky than returns to bondholders, equity investors must be compensated for bearing that risk. Risk premium approaches, therefore, estimate the cost of equity as the sum of the equity risk premium and the yield on a particular class of bonds. As noted in my discussion of the CAPM, since the equity risk premium is not directly observable, it typically is estimated using a variety of approaches, some of which incorporate *ex-ante*, or forward-looking estimates of the cost of equity, and others that consider historical, or *ex-post*, estimates. An alternative approach is to use actual authorized returns for natural gas utilities to estimate the equity risk premium.

Q. PLEASE EXPLAIN HOW YOU PERFORMED YOUR BOND YIELD PLUS RISK PREMIUM ANALYSIS.

A. I first defined the equity risk premium as the difference between the authorized ROE and the then-prevailing level of long-term interest rates. I then gathered data from 516 natural gas rate proceedings between the fourth quarter of 1992 and February 12, 2016 and calculated the average authorized ROE for each calendar quarter.[14] Using that data, I calculated the observed risk premium in each quarter as the difference between the average authorized ROE and the average utility Baa bond yield reported by Moody's.

Relative to the long-term historical average, the analytical period includes interest rates and authorized ROEs that are relatively high during one period (*i.e.*,

[14] The period for which data was available. The data covers a number of economic cycles; *see* National Bureau of Economic Research, *U.S. Business Cycle Expansion and Contractions*.

the early 1990s) and that are quite low during another (*i.e.*, the post-Lehman bankruptcy period). To account for the well-documented inverse relationship between interest rates and the risk premium,[15] I conducted a regression analysis in which the observed equity risk premium is the dependent variable, and the average utility Baa bond yield is the independent variable. The form of the equation for the regression analysis was:

$$RP = \alpha + \beta(T) \qquad \text{Equation [6]}$$

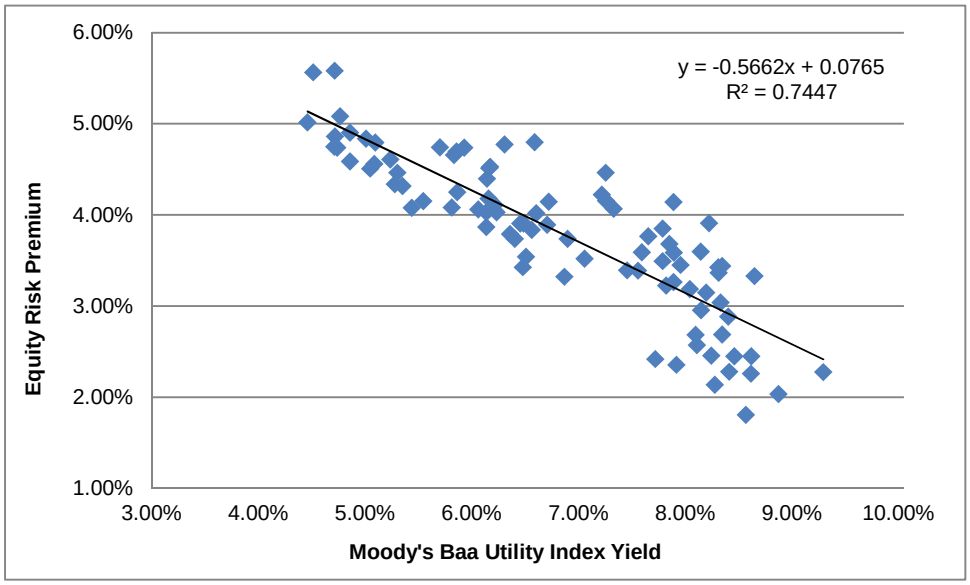
where "RP" is the risk premium (i.e., average authorized ROE less average utility Baa bond yield yield), "α" is the intercept term, "β" is the slope term and "T" is the average yield on Baa-rated utility bonds.

Q. WHAT WERE THE RESULTS OF YOUR BOND YIELD PLUS RISK PREMIUM ANALYSIS?

A. As Chart 1 illustrates, over time there has been a statistically significant, negative relationship between Baa-rated utility bond yields and the equity risk premium.

[15] *See, e.g.*, Robert S. Harris and Felicia C. Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts*, Financial Management, Summer 1992, at 63-70; Eugene F. Brigham, Dilip K. Shome, and Steve R. Vinson, *The Risk Premium Approach to Measuring a Utility's Cost of Equity*, Financial Management, Spring 1985, at 33-45; and Farris M. Maddox, Donna T. Pippert, and Rodney N. Sullivan, *An Empirical Study of Ex Ante Risk Premiums for the Electric Utility Industry*, Financial Management, Autumn 1995, at 89-95.

Chart 1: Equity Risk Premium[16]



Consequently, simply applying the long-term average equity risk premium of 3.80 percent would significantly understate the cost of equity and produce results well below any reasonable estimate. Based on the regression coefficients in Chart 1, however, the implied ROE is between 10.00 percent and 10.60 percent (*see* Magee Exhibit KM-2, Schedule 6 and Table 5, below).

Table 5: Bond Yield Plus Risk Premium Results[17]

Treasury Yield	***Return on Equity***
Current Baa Utility Bond Yield (5.54%)	10.00%
Near Term Projected Utility Bond Yield (5.91%)	10.13%
Long Term Projected Utility Bond Yield (6.92%)	10.60%

[16] Source: SNL Financial and Bloomberg Professional.

[17] Projected Baa utility bond yields calculated as current yield plus Blue Chip Financial Forecast's projected increase in corporate Baa bond yields. *See*, Blue Chip Financial Forecasts, Vol. 35, No. 2, Feb. 1, 2016, at 2; and, Blue Chip Financial Forecasts, Vol. 34, No. 12, Dec. 1, 2016, at 14.

Q. HAS THE BOARD USED THE RISK PREMIUM METHOD IN ITS ROE ANALYSIS IN PAST RATE CASES?

A. Yes, it has. In the final order dated January 10, 2011 in Interstate Power and Light Company's 2010 electric rate case, Docket No. RPU-2010-0001, for example, the Board noted it has historically used a risk premium model that adds a risk premium range of 250 to 450 basis points to A-rated utility bond yields. However, the board also noted that model produced unreliable results due to unusually low A-rated utility yields at the time:

> The Board in recent years has used the risk premium method as a check on reasonableness when determining return on equity. The risk premium model often used by the Board adds 250 to 450 basis points to the most current A-rated utility bond yield, rather than to the 12-month average. The most recent bond yield available is August's 5.04 percent, producing a return on equity range of 7.54 to 9.54 percent. Because yields have been unusually low, it is appropriate to also look at the 12-month average from September 2009 to August 2010. The average 5.6 percent A-rated bond yield produces a risk premium range of 8.1 to 10.1. These ranges are historically low and cannot be relied upon as predicators of the future with as much confidence as in prior cases.
>
> In reviewing current market data and the ranges produced by the Board's risk premium analysis and the other market-based models, the Board concludes a return on equity range between 9.9 and 10.4 percent is reasonable, particularly given the relative closeness of the ranges produced by the all three models, DCF, CAPM, and risk premium.

Q. WOULD A 250 TO 450 BASIS POINT RISK PREMIUM OVER A-RATED UTILITY YIELDS PROVIDE A REASONABLE ROE ESTIMATE UNDER CURRENT MARKET CONDITIONS?

A. No, it would not. The 4.09 percent A-rated utility bond yield as of February 12, 2016 is nearly 100 basis points below the 5.04 percent yield the Board expressed

concern with in Docket No. RPU-2010-0001. The result produced by that risk premium approach would be 6.59 percent to 8.59 percent, which is well below the 9.00 percent to 10.30 percent range of authorized gas ROEs observed in other jurisdictions over the past 12-months.

As discussed in Section VIII of this Direct Testimony, the relatively low level of long-term interest rates is related to accommodative Federal Reserve's monetary policy that included extraordinary quantitative easing initiatives. It is also important to note that Baa-rated utility debt yields are essentially at the same level they were in August 2010 (declining slightly from 5.36 percent as of August 31, 2010 to 5.26 percent as of February 12, 2016), even as A-rated utility yields have declined by almost 100 basis points. The increased spread between A-rated and Baa-rated utility debt yields suggests increasing investor risk aversion, which implies a higher equity risk premium. Consequently, I believe the risk premium model I apply above, which takes into consideration the inverse relationship between interest rates and the equity risk premium and is based on Baa-rated bond yields, provides a more reasonable ROE estimate for Liberty Midstates (whose parent company has a Baa-equivalent rating).

EXPECTED EARNINGS ANALYSIS

Q. PLEASE BRIEFLY DESCRIBE YOUR EXPECTED EARNINGS ANALYSIS.

A. The expected earnings analysis calculates the projected returns on book value for the gas industry group as a whole and for the specific firms in the proxy group individually. To implement the model, I used the projected return on common

equity for the period 2018-2020 provided in the latest Value Line gas utility reports. I then adjusted those returns to account for the fact that they show ROE on the basis of common shares outstanding at the end of the period, as opposed to ROE on average shares outstanding.

In reviewing the results, I first considered the expected returns for all Value Line gas utilities (note that mergers do not affect book returns on equity as they do the DCF returns on market value) for which the mean and median expected returns were 11.32 percent and 11.86 percent. I then reviewed the mean and median proxy group returns, which were 11.30 percent and 11.42 percent, respectively (see Schedule 7 of Magee Exhibit KM-2).

Q. WHAT ARE THE ADVANTAGES OF USING AN EXPECTED EARNINGS MODEL?

A. Whereas other cost of equity analyses calculate investors' required return on the market value of their investments, the expected earnings model is uniquely suited to the task of determining an appropriate return on book value of equity. For example, as noted above, the DCF model depends on market data. The dividend yield, a principal component of the DCF analysis, is a market-derived parameter. Since the DCF model calculates the discount rate that equates the future stream of cash flows to the current market price, it calculates the required return on the market value of the utility's stock (rather than the book value of equity). Similarly, the CAPM also calculates a required return on market price (*e.g.*, risk is based on movements in stock prices, and required risk compensation is based on expected returns on a market index). In practice, those returns are applied to the

book value of the utility's equity to determine the revenue requirement. The market value, except under very rare circumstances, is not equal to the book value. Given this mismatch, it is useful to consider a direct measure of the expected return on the book value, versus market value, of utility stocks.

VII. BUSINESS RISKS AND OTHER CONSIDERATIONS

Q. WHAT ADDITIONAL INFORMATION DID YOU CONSIDER IN ASSESSING THE ANALYTICAL RESULTS NOTED ABOVE?

A. Because the analytical methods discussed above provide a range of estimates, there are several additional factors that should be taken into consideration when establishing a reasonable range for the Company's cost of equity. Those factors include (1) the Company's relatively small size; (2) weather variability; and (3) flotation costs associated with equity issuances.

A. Small Size

Q. PLEASE EXPLAIN THE RISK ASSOCIATED WITH SMALL SIZE.

A. Both the financial and academic communities have long accepted the proposition that the cost of equity for small firms is subject to a "size effect."[18] While empirical evidence of the size effect often is based on studies of industries beyond regulated utilities, utility analysts also have noted the risks associated with small market capitalizations. Specifically, Ibbotson Associates noted: "For small utilities, investors face additional obstacles, such as a smaller customer base, limited financial resources, and a lack of diversification across customers, energy

[18] *See* Mario Levis, *The record on small companies: A review of the evidence*, Journal of Asset Management, March 2002, at 368-397, for a review of literature relating to the size effect.

sources, and geography. These obstacles imply a higher investor return."[19]

Q. HOW DOES LIBERTY MIDSTATES COMPARE IN SIZE TO THE PROXY COMPANIES?

A. Liberty Midstates is significantly smaller than the proxy group, both in terms of number of customers and annual revenues. Schedule 8 of Magee Exhibit KM-2 estimates the implied market capitalization for Liberty Midstates (*i.e.*, the implied market capitalization if Liberty Midstates were a stand-alone, publicly traded entity). That is, because Liberty Midstates is not a separately traded entity, an estimated stand-alone market capitalization for Liberty Midstates must be calculated. The implied market capitalization of Liberty Midstates is calculated by applying the median market-to-book ratio for the proxy group of 1.85 to the Company's implied total common equity of approximately $3.63 million. The implied market capitalization based on that calculation is $6.70 million, which is less than 1.00 percent of the proxy group median of $2.72 billion.

Q. HAVE YOU ALSO CONSIDERED LIBERTY MIDSTATES' COMPARATIVELY SMALL SIZE IN YOUR ESTIMATED COST OF EQUITY?

A. Yes. While I have quantified the small size effect, rather than proposing a specific premium, I have considered the small size of Liberty Midstates in my assessment of business risks in order to determine where, within a reasonable range of returns, Liberty Midstates' required ROE appropriately falls.

[19] Michael Annin, *Equity and the Small-Stock Effect*, Public Utilities Fortnightly, October 15, 1995.

Q. HOW DID YOU ESTIMATE THE SIZE PREMIUM FOR LIBERTY MIDSTATES?

A. In its *2015 Ibbotson SBBI Market Report*, Morningstar, Inc. ("Morningstar") presents its calculation of the size premium for deciles of market capitalizations relative to the S&P 500 Index.[20] An additional estimate of the size premium associated with Liberty Midstates, therefore, is the difference in the Morningstar size risk premiums for the proxy group median market capitalization relative to the implied market capitalization for Liberty Midstates.

As shown on Schedule 8 of Magee Exhibit KM-2, based on recent market data, the median market capitalization of the proxy group was approximately $2.72 billion, which corresponds to the fifth decile of Morningstar's market capitalization data. Based on the Morningstar analysis, that decile has a size premium of 1.65 percent (or 165 basis points). The implied market capitalization for Liberty Midstates is approximately $6.70 million, which falls within the tenth decile and corresponds to a size premium of 5.72 percent (or 572 basis points). The difference between those size premiums is 407 basis points (4.07 percent).

B. Weather Risk

Q. PLEASE SUMMARIZE THE RISK POSED BY YEARLY WEATHER VARIATIONS.

A. Weather risk leads to cash flow and earnings variability from season to season and year to year due to variability in temperatures. Since the demand for natural gas is strongly correlated to heating degree days (*i.e.*, colder temperatures result in

[20] *See* Morningstar, Inc., 2015 Ibbotson SBBI Market Report, at 16.

greater demand), gas utility revenues and cash flows are highly dependent on weather.

Q. DO INVESTORS RECOGNIZE THE RISKS ASSOCIATED WITH WEATHER?

A. Yes, investors are aware of the relationship between seasonal weather, heating degree days and natural gas distributor operations. For example, in a survey of the natural gas industry, Value Line stated:

> Weather is a factor that affects the demand for natural gas, particularly from small commercial businesses and consumers. Not surprisingly, earnings for utilities are susceptible to seasonal temperature patterns, with consumption normally at its highest level during the winter heating months. Unseasonably warm or cold weather can create substantial volatility in quarterly operating results. But some companies strive to counteract this exposure through temperature-adjusted rate mechanisms, which are available in a number of states. Therefore, investors interested in utilities with more-stable profits from year to year are advised to look for companies that hedge this risk.[21]

Q. HOW DOES LIBERTY MIDSTATES' WEATHER RISK COMPARE TO THE PROXY GROUP COMPANIES?

A. The effect of weather risk for Liberty Midstates is more severe than most of the comparable companies because the Company does not have a weather normalization clause or other form of rate protection against extreme weather variation. To the extent the Company experiences a warmer than normal winter heating season, it faces the risk of significant under-recovery of its fixed costs since a substantial portion of those costs continue to be recovered through volumetric charges. Many gas distribution companies have existing or pending

[21] Value Line Investment Survey, Natural Gas Utility, September 7, 2012.

revenue stabilization mechanisms in place to manage the fluctuations in sales volume due to weather. According to reviews undertaken by Regulatory Research Associates ("RRA"), and consistent with my review of annual Securities and Exchange Form 10-K filings, all of the proxy group companies have some form of revenue stabilization mechanism to mitigate volumetric uncertainty due to weather (*see* Magee Exhibit KM-2, Schedule 9).[22]

As compared to the proxy companies, a significant portion of the Company's fixed costs remain vulnerable to under-recovery from volumetric uncertainty due to weather. As shown in Schedule 11 of Magee Exhibit KM-2, most of the proxy companies are able to mitigate weather risks for the vast majority of their customers. Moreover, weather normalization mechanisms enable full cost recovery for the majority of the proxy companies.

Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE EFFECT OF THE WEATHER UNCERTAINTY ON THE COMPANY'S RISK PROFILE RELATIVE TO THE PROXY GROUP?

A. Relative to the proxy companies, Liberty Midstates has at greater risk of under-recovering its fixed distribution costs due to decreased sales attributable to abnormal weather. With respect to weather risk, therefore, the Company is exposed to greater risk of not earning its required return. Consequently, investors would require a higher return as compensation for the higher level of cash flow and earnings variability. That incremental risk and required return supports the conclusion that Liberty Midstates' cost of equity should be toward the upper end

[22] Regulatory Research Associates, *Adjustment Clauses and Rate Riders*, October 2, 2015; most recent company SEC Form 10-K filing as of January 15, 2016.

of the range of analytical results.

Q. DO YOU HAVE ANY OTHER THOUGHTS REGARDING THE COMPANY'S RISK PROFILE?

A. Yes, I do. As a capital-intensive enterprise, Liberty Midstates has a relatively high proportion of fixed costs to variable costs. That is, the Company has a relatively high degree of "operating leverage." As such, a relatively small change in revenues will have a comparatively large change in earnings.[23] As noted by Company witnesses Beatty and Schwartz, Liberty Midstates' residential customer base has declined over time, and continues to decline. In light of that declining customer base, and given the relatively high degree of operating leverage, there is greater uncertainty regarding the Company's ability to earn its required return.

C. Flotation Costs

Q. WHAT ARE FLOTATION COSTS?

A. Flotation costs are the costs associated with the sale of new issues of common stock. These include out-of-pocket expenditures for preparation and filing, as well as underwriting and other costs of issuance.

Q. ARE FLOTATION COSTS PART OF THE UTILITY'S INVESTED COSTS OR PART OF THE UTILITY'S EXPENSES?

A. Flotation costs are part of capital costs, which are properly reflected on the balance sheet under "paid in capital" rather than current expenses on the income statement. Flotation costs are incurred over time, just as investments in rate base

[23] *See*, for example, J. Fred Weston, Eugene F. Brigham, Essentials of Managerial Finance, 9th Ed., The Dryden Press, 1990, at 371 – 373.

or debt issuance costs. As a result, the great majority of flotation costs are incurred prior to the test year, but remain part of the cost structure during the test year and beyond.

Q. HOW DID YOU CALCULATE THE FLOTATION COST RECOVERY ADJUSTMENT?

A. I modified the constant growth DCF calculation to provide a dividend yield that would reimburse investors for issuance costs. My flotation cost adjustment recognizes the costs of issuing equity that were incurred by APUC and the proxy group companies in their most recent two issuances. As shown in Schedule X.10 of Magee Exhibit KM-2, an adjustment of 0.13 percent (*i.e.*, 13 basis points) reasonably represents flotation costs for the Company.

Q. ARE YOU PROPOSING TO ADJUST YOUR RECOMMENDED ROE BY 13 BASIS POINTS TO REFLECT THE EFFECT OF FLOTATION COSTS ON THE COMPANY'S ROE?

A. No. Rather, I have considered the effect of flotation costs, in addition to the Company's other business risks, in determining where the Company's ROE falls within the range of results.

VIII. CAPITAL MARKET ENVIRONMENT

Q. DO ECONOMIC CONDITIONS INFLUENCE THE REQUIRED COST OF CAPITAL AND REQUIRED RETURN ON COMMON EQUITY?

A. Yes. The required cost of capital, including the ROE, is a function of prevailing and expected economic and capital market conditions. As discussed in Section VI, the models used to estimate the cost of equity are meant to reflect, and

therefore are influenced by, current and expected capital market conditions. However, it is important to recognize that all analytical models used to estimate the required ROE are based on simplifying assumptions that may not hold true under specific market circumstances. When market data used in the ROE models reflect unusual market conditions that investors may not expect to persist (such as current interest rates), it is important to assess the reasonableness of the results in the context of other observable market data. To the extent that certain ROE estimates are incompatible with such data or inconsistent with basic financial principles, it is appropriate to consider whether alternative estimation techniques are likely to provide more meaningful and reliable results.

Q. ARE THERE ANY MARKET FACTORS THAT CALL INTO QUESTION ROUTINE APPLICATION OF THE DCF OR CAPM ANALYSES AT THE CURRENT TIME?

A. Yes, there are. In particular, as discussed in more detail below, the Federal Reserve's unprecedented actions after the recent financial crisis have continued to have a significant influence on capital markets. It is clear, for example, that those actions have led to historically low long-term yields (which can skew the results of risk premium models such as the CAPM) and unusually high utility stock valuations (which can suppress DCF-based market results). Consequently, I believe it is reasonable to give more weight to the upper end of the range of DCF results at the current time and to give particular consideration to investors' expectations for future interest rate levels when performing risk premium analyses.

A. Federal Reserve Actions

Q. PLEASE SUMMARIZE THE EFFECT OF RECENT FEDERAL RESERVE POLICIES ON INTEREST RATES AND THE COST OF CAPITAL.

A. Starting in the summer of 2007, the Federal Reserve took a number of steps to respond to the emerging financial crisis. Among other actions, the Federal Reserve lowered the Federal Funds rate from 5.25 percent in September 2007 to 0.00 - 0.25 percent by December 2008.[24] Beginning in 2008, the Federal Reserve also proceeded on a steady path of "quantitative easing" ("QE") initiatives intended to lower long-term Treasury yields.[25] QE was "designed to put downward pressure on longer-term interest rates by having the Federal Reserve take onto its balance sheet some of the duration and prepayment risks that would otherwise have been borne by private investors."[26] While the Federal Reserve completed its final round of QE in October 2014, it has continued to reinvest principal repayments from its holdings of agency debt and mortgage-backed securities.[27] Under that policy, "Securities Held Outright" on the Federal Reserve's balance sheet increased from approximately $489 billion at the

[24] *See* http://www.federalreserve.gov/monetarypolicy/openmarket.htm.

[25] *See* Federal Reserve Press Release dated June 19, 2013. (Available at http://www.federalreserve.gov/newsevents/press/monetary/20130619a.htm).

[26] Federal Reserve Bank of New York, *Domestic Open Market Operations During 2012*, April 2013, at 29. (Available at https://www.newyorkfed.org/medialibrary/media/markets/omo/omo2012-pdf.pdf).

[27] http://www.federalreserve.gov/monetarypolicy/bst_openmarketops.htm.

beginning of October 2008 to $4.24 trillion by mid-February 2016.[28] To put that increase in context, the securities held by the Federal Reserve represented approximately 3.29 percent of Gross Domestic Product ("GDP") at the end of September 2008, and had risen to approximately 23.37 percent of GDP in February 2016.[29] As of the end of 2014, the Federal Reserve held approximately 45.00 percent of the outstanding supply of long-term Treasury Securities with ten to thirty years remaining until maturity.[30] As such, the Federal Reserve policy actions have represented a significant source of liquidity, and have had a substantial effect on capital markets.

In December 2015 the Federal Reserve raised the Federal Funds rate for the first time in nine years, and began the process of rate normalization.[31] There remains significant uncertainty, however, surrounding the timing of the Federal Reserve's future policy decisions, including the unwinding of stimulus programs. That uncertainty represents a risk to investors that, in my view, should be reflected in the Company's authorized ROE.

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[28] Source: Federal Reserve Schedule H.4.1. "Securities Held Outright" include U.S. Treasury securities, Federal agency debt securities, and mortgage-backed securities.

[29] Sources: Federal Reserve Schedule H.4.1; Bureau of Economic Analysis, GDP data as of the fourth calendar quarter of 2013.

[30] Federal Reserve Bank of New York, *Domestic Open Market Operations During 2014*, April 2015 at 17. (Available at https://www.newyorkfed.org/medialibrary/media/markets/omo/omo2014-pdf.pdf).

[31] *Federal Reserve Press Release* dated December 16, 2015. (Available at http://www.federalreserve.gov/newsevents/press/monetary/20151216a1.htm).

Q. HAS THE FEDERAL RESERVE'S QUANTITATIVE EASING POLICY BEEN ASSOCIATED WITH CHANGES IN THE PROXY COMPANIES' TRADING LEVELS?

A. Yes. From January 2000 through the end of August 2012 (that is, immediately prior to the third round of QE), the proxy group's average P/E ratio traded at a 9.00 percent *discount* to the market, as measured by the S&P 500 Index. From September 2012 through October 2014 (during the third round of QE) the proxy group traded at a 12.00 percent *premium* to the market. Following the end of QE through December 2015, the proxy group's average P/E ratio fell to approximately 102.00 percent of the market P/E (*i.e.*, a 2.00 percent premium), closer to the long-term relationship. Given the convergence in the proxy group and market average P/E ratios during that period, it may be that investors saw the gas utility sector as somewhat over-valued relative to the market, and bid prices down in response. Since the beginning of the year, however, the premium has increased to 14.00 percent.

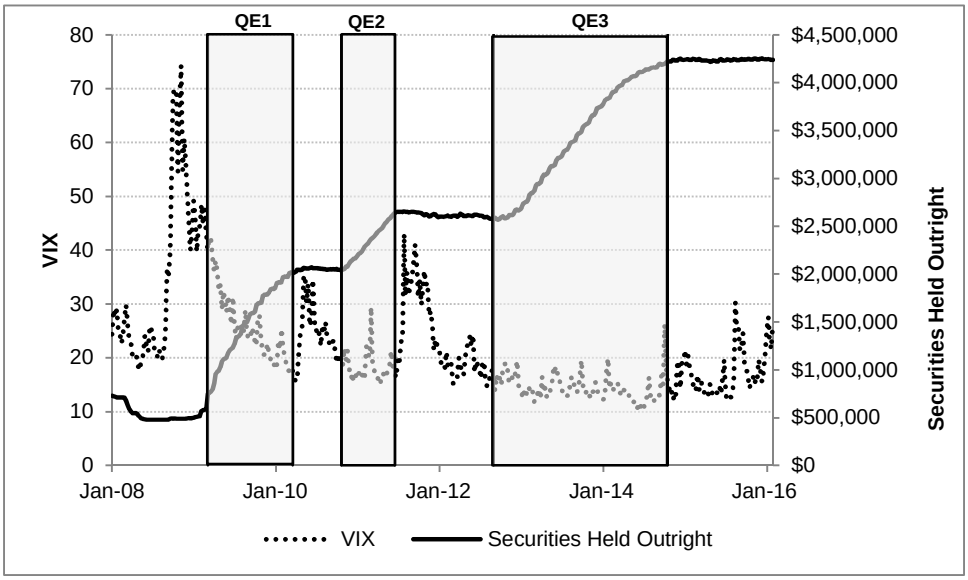
The sustainability of recent utility company valuations is a significant analytical issue. Because DCF-based methods depend on recent stock prices as a principal input, and because the constant growth model assumes that P/E ratios and the cost of equity will remain constant in perpetuity, the lingering effects of Federal Reserve intervention may be weighing on DCF results.

Q. HAVE THE FEDERAL RESERVE'S ACTIONS HAD OTHER SIGNIFICANT EFFECTS ON THE STOCK MARKET?

A. Yes. Aside from the reducing interest rates, it also has had the effect of reducing

market volatility. As shown in Chart 2 below, each time the Federal Reserve began to purchase bonds (as evidenced by the increase in "Securities Held Outright" on its balance sheet), volatility subsequently declined. In fact, in September 2012, when the Federal Reserve began to purchase long-term securities at a pace of $85 billion per month, volatility (as measured by the Chicago Board Options Exchange Volatility Index, known as the "VIX") fell, and through October 2014 (the end of the final round of QE) remained in a relatively narrow range. The reason is quite straight-forward: Investors became confident that the Federal Reserve would intervene if markets were to become unstable.

Chart 2: VIX and Federal Reserve Asset Purchases[32]



The important analytical issue is whether we can infer from the level of Government bond yields that risk aversion among investors is at a historically low level, implying a correspondingly low cost of equity. Given the negative

[32] Source: Federal Reserve Economic Data (FRED), Federal Reserve Bank of St. Louis; Federal Reserve Statistical Release H.4.1, Factors Affecting Reserve Balances.

correlation between the expansion of the Federal Reserve's balance sheet and the VIX, and in light of the fact that volatility is now considerably above its prior levels (as discussed below), it is difficult to conclude that fundamental risk aversion and investor return requirements have fallen. If it were the case that investors believe that volatility will remain at low levels (that is, that market risk and uncertainty will remain low), it is not clear why they would decrease their return requirements for defensive sectors such as utilities. In that respect, current utility DCF results may express a high level of risk aversion in the market, even as the Federal Reserve's market actions have created contradictory market signals.

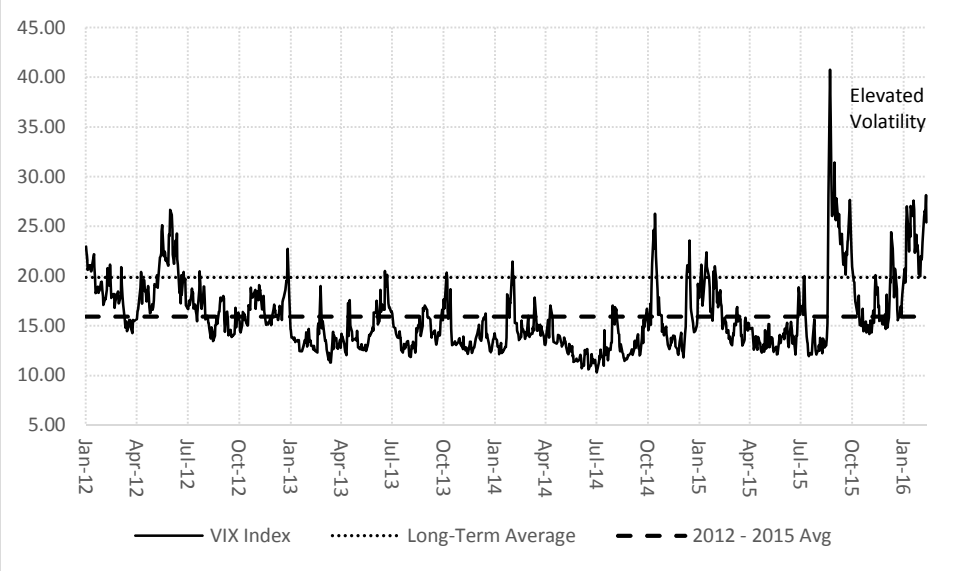
B. Equity Market Volatility

Q. PLEASE DISCUSS RECENT CHANGES IN EQUITY MARKET VOLATILITY.

A. As noted above, one measure of the expected volatility, or risk, of the stock market is the VIX. VIX is a highly visible, and often-reported barometer of investor risk sentiments which measures market expectations of near-term volatility of the stock market implied by near- and next-term options on the S&P 500 Index. Although the VIX is not presented as a percentage, it should be understood as such. That is, if the VIX stood at 17.00, it would be interpreted as an expected standard deviation in annual returns on the market index of 17.00 percent over the coming 30 trading days. The VIX has averaged approximately 19.84 since 1990, which is quite close to the long-term standard deviation of annual returns on the S&P 500, which has been 20.55 percent.

As shown in Chart 3, VIX was at relatively low levels from 2012 – 2015 (which, as discussed above, appears to be an outcome of Federal Reserve monetary policy). The average VIX over the last six months of 2012 was approximately 16.48, nearly 17.00 percent lower than its long-term average. The average in 2014 was 14.18. Beginning in the latter portion of 2015, however, volatility returned in both markets and year-to-date the VIX has averaged 23.86. From that broad perspective, equity risk currently is elevated relative to historical levels.

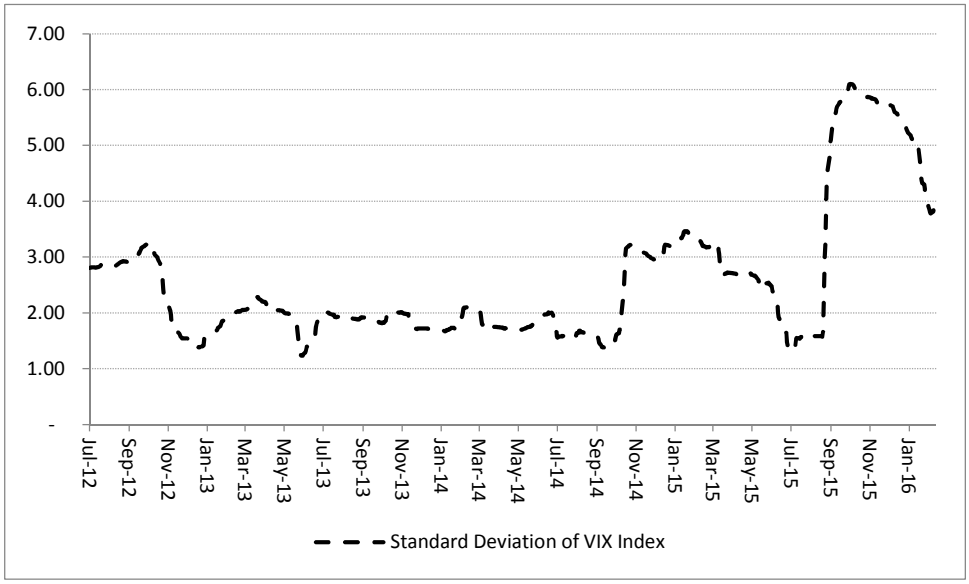
Chart 3: VIX Daily Levels and Long-Term Average



A further measure of market uncertainty is the volatility of the VIX itself. That is, we can look to the volatility of volatility, as measured by the standard deviation of the VIX. As Chart 4 (below) notes, the volatility of the VIX moved in a relatively narrow range since mid-2012, but noticeably increased at the end of 2015. Such volatility indicates that, although interest rates are still near historical lows in the U.S. capital markets, there remains significant, if not greater,

uncertainty in today's equity markets, with investors requiring greater returns to bear that risk.

Chart 4: Standard Deviation (100 days) of VIX



Those findings are consistent with the VVIX, which is a traded index of the expected volatility of the VIX. Over the long-term, the VVIX has averaged approximately 86.80. In 2015, the VVIX increased to (on average) 94.82, and to date in 2016, has averaged 104.47; the 2015-2016 average has been 95.81. Just as the backward-looking standard deviation of the VIX indicates that observed volatility increased considerably in 2015 and 2016, the VVIX indicates that expected volatility also has been well above long-term average levels.

C. Interest Rate Expectations

Q. DOES YOUR RECOMMENDATION ALSO CONSIDER THE INTEREST RATE ENVIRONMENT?

A. Yes, it does. From an analytical perspective, it is important that the inputs and assumptions used to arrive at an ROE recommendation, including assessments of

capital market conditions, are consistent with the recommendation itself. Although I appreciate that all analyses require an element of judgment, the application of that judgment must be made in the context of the quantitative and qualitative information available to the analyst and the capital market environment in which the analyses were undertaken.

The low interest rate environment associated with central bank intervention may lead some analysts to conclude that current capital costs, including the cost of equity, are low and will remain as such. Putting aside the increases in volatility discussed above, that conclusion only holds true under the hypothesis of Perfectly Competitive Capital Markets ("PCCM") and the classical valuation framework which, under normal economic and capital market conditions, underpin the traditional cost of equity models. Perfectly Competitive Capital Markets are those in which no single trader, or "market-mover", would have the power to change the prices of goods or services, including bond and common stock securities. In other words, under the PCCM hypothesis, no single trader would have a significant effect on market prices.

Classic valuation theory assumes that investors trade securities rationally, with prices reflecting their perceptions of value. Although central banks have the ability to set benchmark interest rates, they have been maintaining below normal rates to stimulate continued economic and capital market recovery. It therefore is reasonable to conclude that the Federal Reserve and other central banks have been acting as market-movers, thereby having a significant effect on the market prices of both bonds and stocks. The presence of market-movers, such as the Federal

Reserve, runs counter to the PCCM hypothesis, which underlies traditional cost of equity models. Consequently, the results of those models should be considered in the context of both quantitative and qualitative information.

Q. PLEASE BRIEFLY DESCRIBE THE CURRENT INTEREST RATE ENVIRONMENT.

A. As noted above, as part of its QE initiatives the Federal Reserve significantly reduced the supply of long-term Treasuries in the market to intentionally lower the long-end of the yield curve. Following the end of the third round of QE, the Federal Reserve has continued a policy of reinvesting principal repayments in order to maintain accommodative financial conditions. Consequently, 10-year Treasury yields have remained at historical lows. For perspective, the 10-year Treasury yield ranged from 2.29 percent to 15.32 percent from 1954 to 2008,[33] while it was 1.74 percent on February 12, 2016. At the same time, Treasury yields have recently been susceptible to unusually volatile swings given their relatively low levels.[34] The 10-year Treasury yield ranged from 1.63 percent to 2.50 percent over the past twelve months.

While Treasury yields have fluctuated, utility bond yields have shown a more steady increase as they have risen from 4.50 percent to 5.26 percent over the past twelve months (ranging from 4.38 percent to 5.63 percent).

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[33] Monthly data. *See* http://www.federalreserve.gov/releases/h15/data.htm.

[34] *See also*, 2014 Annual Report, JPMorgan and Chase Company, at 31. JPMorgan notes "Treasury markets were quite turbulent in the spring and summer of 2013, when the Fed hinted that it soon would slow its asset purchases. Then on one day, October 15, 2014, Treasury securities moved 40 basis points, statistically 7 to 8 standard deviations – an unprecedented move[…]" (Available at http://investor.shareholder.com/jpmorganchase/annual.cfm)

Q. ARE INTEREST RATES EXPECTED TO INCREASE GOING FORWARD?

A. Yes, they are. Consensus projections gathered by *Blue Chip Financial Forecasts* suggest a 30-year Treasury yield of 4.00 percent by 2017.[35] Those projections are supported by the fact that investors currently are willing to pay about one and a half times the premium for the option to sell long-term Government bonds in January 2018 (with an exercise price equal to the current price) than they are willing to pay for the option to buy those bonds.[36] Because the prices of bonds move inversely to interest rates,[37] those option prices indicate that investors believe it is considerably more likely that interest rates will increase over the coming year, than it is likely that they will decrease.

Given that: (1) Federal monetary policy is likely moving toward a process of "normalization"; and (2) economists and market data indicate expectations for increasing interest rates into 2017 and beyond, I believe that my 10.25 percent ROE recommendation properly reflects the prevailing and expected interest rate environment.

Q. WHAT OTHER INDICATORS SUGGEST INVESTOR RISK AVERSION HAS INCREASED?

A. "Credit spreads", which are the incremental return required by debt investors to take on the default risk associated with securities of differing credit quality, have

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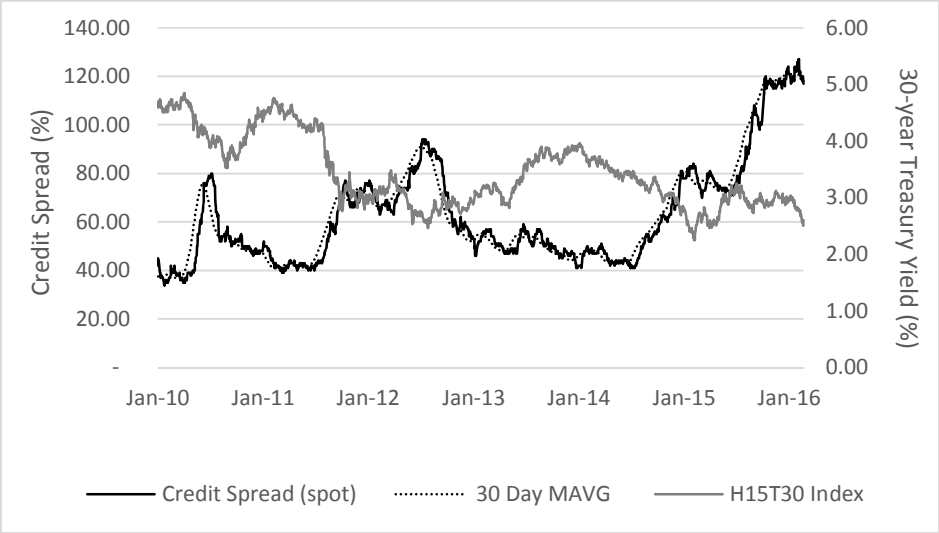
35 *See*, Blue Chip Financial Forecast, Vol. 34 No. 12, December 1, 2015, at 14.

36 Source: http://www.nasdaq.com/symbol/tlt/option-chain?dateindex=7

37 That is, as interest rates move up (down), bond prices move down (up).

increased significantly over the past year even as interest rates remain near historical lows. As chart 5 (below) demonstrates, the estimated credit spread (on both a spot and 30-day moving average basis) has widened, such that it currently well exceeds the levels seen from 2011 through 2014. By way of example, since the order in Liberty Midstates' last Illinois rate case (February 11, 2015), the 30-day average spread increased by approximately 42 basis points, or by 55.33 percent.

Chart 5: 30-Year Treasury Yields and Utility Bond Index Baa-A Credit Spreads[38]



To the extent that credit spreads have increased, it is an observable measure of the capital markets' increased risk aversion; increased risk aversion by investors leads to an increased cost of equity. In addition, there is a clear and well-established inverse relationship between the level of interest rates and the equity risk premium.[39] Consequently, lower Treasury yields do not necessarily

[38] Source: Bloomberg Professional.

[39] *See* Chart 1.

imply a correspondingly lower cost of equity, particularly considering the current level of credit spreads is significantly higher than seen over the past five years.

Q. ARE POTENTIAL INTEREST RATE INCREASES SEEN AS A RISK FOR UTILITY INVESTORS?

A. Yes, they are. For example, in December 2014 (near a recent peak in utility valuations) a report by Value Line warned investors of the negative effect from expected increases in interest rates:

> It is highly unlikely that investors will see a repeat of the run-ups that most stocks in this industry experienced in 2014. These advances accelerated late in the year. As the new year began, interest rates continued to decline, but we note that our Quarterly Economic Review estimates that interest rates will be higher this year. If so, that would probably hurt these stocks, all else equal.
>
> […]
>
> Our long-term economic projections are for interest rates to be significantly above today's level. As mentioned, higher interest rates are normally a negative factor for utility equities.[40]

Value Line continues to foresee potential valuation pressures on utilities, forecasting a decline in the P/E ratio for all seven of the companies in my proxy group over the coming three to five years.[41]

Q. WHAT CONCLUSIONS DO YOU DRAW FROM YOUR ANALYSES OF CAPITAL MARKET CONDITIONS?

A. The data discussed above clearly demonstrate that the current capital market has been affected by Federal Reserve policy and is experiencing increasing levels of risk aversion, volatility and instability. Because the estimation of the cost of

[40] Value Line, December 2014.

[41] Source: Value Line.

equity can be affected by those factors, it is important to use judgment when applying the different ROE models and interpreting their results. For example, the elevated gas utility P/E ratios associated with the Federal Reserve's QE initiatives suggest current DCF results may be unduly low and should be viewed with considerable caution. In addition, investor expectations for increased Treasury yields suggest forward-looking interest rates should be considered when employing the CAPM and bond yield plus risk premium model.

Given that: (1) Federal monetary policy has begun its process of "normalization"; (2) equity market volatility has increased and is expected to remain elevated; (3) market data indicate expectations for increasing interest rates into 2017 and beyond; and (4) credit spreads have widened, I believe it is appropriate to give somewhat less weight to the low end of the DCF result and to consider forward-looking CAPM and bond yield plus risk premium results when determining where the required ROE falls within the range of analytical results. In that light, I believe my 10.25 percent ROE recommendation properly reflects the current capital market.

IX. CAPITAL STRUCTURE

Q. WHAT CAPITAL STRUCTURE ARE YOU PROPOSING FOR LIBERTY MIDSTATES?

A. I am proposing an authorized capital structure consisting of 54.00 percent common equity and 46.00 percent long-term debt. A 54.00 percent equity ratio is between APUC's equity ratio (53.74 percent) and LUCo's equity ratio (see

Schedule 12 of Magee Exhibit KM-2) as of December 31, 2015.[42] While the proposed capital structure contains less equity than Liberty Midstates' currently uses to finance its assets, it is consistent with the proxy group average capital structure (discussed in more detail below) and Moody's benchmark equity capitalization range for Baa rated utilities.[43]

Q. HOW DOES THE CAPITAL STRUCTURE AFFECT THE COST OF EQUITY?

A. The capital structure relates to a Company's financial risk, which represents the risk that a company may not have adequate cash flows to meet its financial obligations, and is a function of the percentage of debt (or financial leverage) in its capital structure. In that regard, as the percentage of debt in the capital structure increases, so do the fixed obligations for the repayment of that debt. To the extent earnings and cash flows become less certain, the ability to meet those fixed obligations also becomes less certain. That is, as the degree of financial leverage increases, the risk of financial distress (i.e., financial risk) also increases; it is for that reason that (in general) credit quality deteriorates and the cost of debt increases with higher levels of debt in the capital structure.

From the perspective of equity investors, who do not have the contractual claim on cash flows given to bondholders, increased levels of debt tend to concentrate the uncertainty of the cash flows remaining after debt payments are

[42] Data for APUC is from quarterly SEC filings through fourth quarter 2015 as reported by SNL Financial. Data for LUCo is 12-month average as of December 31, 2015, as calculated from data provided by the Company.

[43] *See* Moody's Investor Service, *Rating Methodology: Regulated Electric and Gas Utilities*, December 23, 2013 at 24. The benchmark Debt/Capitalization range for a Baa rating is 45%-55%, implying an equity ratio range of 45% to 55%. Note, Moody's Baa rating is the equivalent of S&P's BBB rating.

made. Because their risk is increased, equity investors also require higher returns as the use of debt increases. Since the capital structure can affect the subject company's overall level of risk,[44] it is an important consideration in establishing a just and reasonable rate of return.

Q. WILL THE CAPITAL STRUCTURE AND ROE AUTHORIZED IN THIS PROCEEDING AFFECT THE COMPANY'S ABILITY TO MAINTAIN ACCESS TO CAPITAL AT REASONABLE RATES?

A. Yes, I believe so. The level of earnings authorized by the Commission directly affects the Company's ability to finance its operations with internally-generated funds. Internally-generated funds are a very important source of investment funding for all utilities, including the Company. For that reason, credit rating agencies and investors expect the Company to be able to generate a substantial portion of its investment funding from operating cash flow in order to maintain adequate financial strength.

Similarly, it also is important to realize that because a utility's investment horizon is very long, investors require the assurance of a sufficiently high ROE to satisfy the long-run financing requirements of the assets the Company places into service. Those assurances, which often are measured by the relationship between internally-generated cash flows and debt (or interest expense), depend quite heavily on the capital structure. As a consequence, both the ROE and capital structure are very important to both debt and equity investors.

[44] *See* Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006, at 45-46.

Q. IS THERE SUPPORT FOR THE PROPOSITION THAT THE CAPITAL STRUCTURE IS A KEY CONSIDERATION IN ESTABLISHING AN APPROPRIATE RETURN ON EQUITY?

A. Yes. The United States Supreme Court and various utility commissions have long recognized the role of capital structure in the development of a just and reasonable rate of return for a regulated utility. In particular, a utility's leverage, or debt ratio, has been explicitly recognized as an important element in determining a just and reasonable rate of return:

> Although the determination of whether bonds or stocks should be issued is for management, the matter of debt ratio is not exclusively within its province. Debt ratio substantially affects the manner and cost of obtaining new capital. It is therefore an important factor in the rate of return and must necessarily be considered by and come within the authority of the body charged by law with the duty of fixing a just and reasonable rate of return.[45]

Perhaps the ultimate authority for balancing the issues of cost and financial integrity is the Supreme Court's decision in *Hope* that was cited and applied by the U.S. Court of Appeals (D.C. Circuit) in 1977:

> The rate-making process under the Act, i.e., the fixing of "just and reasonable" rates, involves a balancing of the investor and the consumer interests." 320 U.S. at 603, 64 S. Ct. at 288. The equity investor's stake is made less secure as the company's debt rises, but the consumer rate-payer's burden is alleviated.[46]

Consequently, the principles of fairness and reasonableness with respect to the allowed rate of return and capital structure are considered at both the federal and state levels.

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[45] *New England Tel. & Tel. Co. v. State, 98 N.H. 211, 220, 97 A.2d 213, 220 (1953), citing New England Tel. & Tel. Co. v. Department of Pub. Util., (Mass.) 327 Mass. 81, 97 N.E. 2d 509, 514; Petitions of New England Tel. & Tel. Co. 116 Vt. 480, 80 A2d 671.*

[46] *Communications Satellite Corp. v. FCC, 198 U.S. App. D.C. 60, 611 F.2d 883.*

Q. PLEASE DISCUSS YOUR ANALYSIS OF THE CAPITAL STRUCTURES OF THE PROXY GROUP COMPANIES.

A. I calculated the average capital structure for each of the proxy group companies over the past eight calendar quarters. As shown in Table 6 (below), the mean of the proxy group actual capital structures is 54.05 percent common equity and 45.95 percent long-term debt. The common equity ratios for the proxy group range from 49.33 percent to 60.04 percent. Based on that review, it is apparent that my proposed capital structure, with a 54.00 percent equity ratio, is generally consistent with the capital structures of the proxy group companies.

Table 6: Proxy Group Average Capital Structure 2014 – 2015[47]

		Common Equity Ratio	Long-Term Debt Ratio
Atmos Energy Corp.	ATO	56.22%	43.78%
Laclede Group, Inc.	LG	49.33%	50.67%
New Jersey Resources Corp.	NJR	59.23%	40.77%
Northwest Natural Gas Co.	NWN	53.87%	46.13%
South Jersey Industries, Inc.	SJI	49.47%	50.53%
Southwest Gas Corp.	SWX	50.17%	49.83%
WGL Holdings	WGL	60.04%	39.96%
Average		**54.05%**	**45.95%**
Median		**53.87%**	**46.13%**

Q. WHAT IS THE BASIS FOR USING AVERAGE CAPITAL COMPONENTS RATHER THAN A POINT-IN-TIME MEASUREMENT?

A. Measuring the capital components at a particular point in time can skew the

[47] *See* Schedule 11.

capital structure by the specific circumstances of a particular period. Therefore, it is more appropriate to normalize the relative relationship between the capital components over a period of time.

Q. WHAT IS YOUR CONCLUSION REGARDING AN APPROPRIATE CAPITAL STRUCTURE FOR LIBERTY MIDSTATES?

A. At the current time, Liberty Midstates' actual equity ratio is at the high end of the range of equity ratios employed by the proxy companies. Considering the range of capital structures in place at APUC, LUCo and Liberty Midstates and the capital structures employed by the proxy group companies, I believe a 54.00 percent equity ratio is reasonable and appropriate.

X. COST OF DEBT

Q. WHAT IS THE COMPANY'S COST OF DEBT?

A. As shown in Minimum Filing Requirement No. 199 IAC 26.5 (e) (13), the Company's cost of debt is 4.83 percent.

Q. HAVE YOU ASSESSED THE COMPANY'S COST OF DEBT RELATIVE TO OTHER NATURAL GAS UTILITIES?

A. Yes, I calculated the embedded cost of debt in authorized natural gas returns from February 12, 2015 to February 12, 2016. The mean embedded cost of debt over that period was 5.25 percent and the median was 5.42 percent.[48] Based on that review, I believe the Company's 4.83 percent cost of debt is reasonable and appropriate.

[48] Data from SNL Financial. Analysis excludes Michigan Gas Utilities due to difference in method of calculating the reported overall rate of return.

XI. CONCLUSIONS AND RECOMMENDATION

Q. WHAT IS YOUR CONCLUSION REGARDING THE COMPANY'S COST OF EQUITY?

A. As discussed earlier in my Direct Testimony, I have performed several analyses to estimate the Company's cost of equity, and have considered several market-wide and Company-specific issues. I also appreciate that, in recent proceedings, the Board has been inclined to attribute certain weight to the DCF model and the CAPM model. In light of those considerations, I believe that a rate of return on common equity in the range of 10.00 percent to 10.50 percent represents the range of equity investors' required rate of return for investment in natural gas utilities similar to Liberty Midstates in today's capital markets. Within that range, it is my view that an ROE of 10.25 percent is reasonable and appropriate.

As discussed earlier in my Direct Testimony, my recommendation reflects analytical results based on a proxy group of natural gas utilities. My recommendation also considers a variety of factors such as the financial environment and the Company's risk profile, including: (1) its relative small size; (2) weather variability; and (3) as noted in the Direct Testimonies of Mr. Beatty and Ms. Schwartz, the Company's declining residential customer base. My recommendation also considers the direct costs associated with equity issuances, although I do not make a specific adjustment for those costs.

I also conclude that a capital structure, which consists of 54.00 percent common equity and 46.00 percent long-term debt, is consistent with industry practice and, therefore, is reasonable and appropriate. Lastly, I conclude that the

Company's 4.83 percent cost of debt, which is consistent with (albeit lower than) the cost of debt reflected in the overall rate of return for gas utilities over the past twelve months, also is reasonable and appropriate.

Table 7: Summary of Analytical Results

Multi-Stage DCF	*Proxy Group*		
	Low	*Mean*	*High*
30-day Stock Prices	8.14%%	9.32%	10.96%
CAPM		*Bloomberg MRP*	*Value Line MRP*
Value Line Beta, Current Risk-Free Rate		10.86%	10.40%
Value Line Beta, Near-Term Projected Risk-Free Rate		10.99%	10.54%
Bloomberg Beta, Current Risk-Free Rate		9.55%	9.17%
Bloomberg Beta, Near-Term Projected Risk-Free Rate		9.76%	9.37%
Bond Yield Plus Risk Premium	*Low*	*Mean*	*High*
Current and Projected Utility Baa Bond Yields	10.00%	10.13%	10.60%
Expected Earnings Analysis	*Low*	*Mean*	*High*
Value Line Projected Return on Book Equity	8.84%	11.32%	12.91%

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

AFFIDAVIT

STATE OF MASSACHUSETTS)
) ss:
COUNTY OF WORCESTER)

I, Keith Magee, being first duly sworn on oath, do hereby depose and state:

1. I am a Director of ScottMadden and my business address is 1900 West Park Drive, Suite 250, Westborough, Massachusetts 01581.

2. The foregoing written Direct Testimony and exhibits thereto were prepared by me or under my direct supervision and I have directed that my written Direct Testimony to be filed with the Iowa Utilities Board on July 25, 2016.

3. I hereby affirm that my written Direct Testimony is true and correct to the best of my knowledge and belief as of the date of this affidavit.

Done at Westborough, Massachusetts, on July 22, 2016.

/s/ Keith Magee

Keith Magee, Director

Subscribed and sworn to before me on July 22, 2016.

/s/ Kimberly Dao

Notary Public in and for said County and Commonwealth of Massachusetts
My commission expires March 11, 2022.